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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/825,726

04/15/2004

Peter Hansen

1100-078

8821

47670

7590

02/15/2008

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EXAMINER

MERCHANT, SHAHID R

ART UNIT

PAPER NUMBER

3692

MAIL DATE

DELIVERY MODE

02/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/825,726	Applicant(s) HANSEN ET AL.	
	Examiner SHAHID R. MERCHANT	Art Unit 3692	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 3, 2008 has been entered.

Status of the Claims

2. This action is in response to the request for continued examination filed on January 3, 2008. Claims 1-23 are pending. Claims 1-17 have been cancelled.

Response to Arguments

3. Applicant's arguments filed January 3, 2008 have been fully considered but they are not persuasive. Regarding claim 18, Applicant argues that Buckwalter does not teach intercepting one or more market order communications. Examiner disagrees.

Buckwalter teaches receiving (intercepting) a customer order in paragraphs 20 and 37.

[0020] In general, and for the purposes of introducing concepts of embodiments of the present invention, option trade activity is monitored and evaluated pursuant to embodiments of the present invention as follows. A customer submits an option order to a broker, requesting execution of the option order. A trading system, upon receipt of the order, timestamps the order and captures the terms of the order (e.g., including information identifying the customer, the requested product, price, quantity, and any restrictions associated with the order). At the time of receiving the order, a snapshot of the market is captured to identify the NBBO at the time of the order. The NBBO at the time of the order is, in some embodiments, an NBBO that is synthesized from BBO data from each exchange. In some embodiments, this information is stored at a database accessible to a customer order protection system server or other device operated to store, monitor and analyze customer orders.

[0037] Process 200 begins at 202 where a customer order is received. In some embodiments, this customer order is received from trading system 200 after it has been submitted to trading system 200 by a customer. The customer order may include details specifying the terms on which the customer wishes the order to be completed. For example, a typical option order will include

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information specifying the customer submitting the order, the product to be traded (e.g., a put or a call of a particular security underlying having a particular expiration and strike price), the quantity of contracts to be traded and any restrictions on the order (e.g., good for the day, etc.). Some orders include information specifying a price (e.g., such as a limit order), while others specify that the trade be performed at the market price. In some embodiments, the information specifying the customer will include a customer name, account number, and branch identifier (if any). In some embodiments, an order identifier or sequence number is assigned to the customer order to uniquely identify the order. In some embodiments, the customer order is time stamped when it is received by trading system 200.

Further, Buckwalter teaches intercepting one or more market order executions matching one of said stored market order identities in paragraph 22 and 42-43.

[0022] Quality data or information is then generated by comparing the market data at the time the order was received and the market data at the time of execution to identify any discrepancies or information affecting execution quality. In some embodiments, if it appears that the customer did not receive best execution on the order, corrective steps may be taken to provide the customer with best execution. In some embodiments, a number of execution quality and analysis reports may be generated based on the stored information, allowing the broker and the broker's customers to monitor and summarize order activity and quality.

[0042] Processing continues at 208 where execution time NBBO data is captured. For example, this NBBO information may be retrieved from market data source 112 such as the OPRA data feed. As used herein, this NBBO data associated with a particular product at the time of execution of a customer order involving the product will be referred to as "execution NBBO data" (and may be synthesized from BBO data from each of the exchanges). The execution NBBO data associated with the product traded is captured and stored or otherwise associated with the order information, the order NBBO data, and the execution data. For example, this information may be stored at, or otherwise accessible to, order protection system 500. In some embodiments, execution NBBO data may also include data relating to market conditions or exchange-specific information such as whether the markets at the time of execution were fast, whether the execution was a book order, auto eligible, late, or the like. Market size at the time may also be provided.

[0043] Processing may continue at 210 where quality data is generated regarding the customer order. Quality data may be generated, for example, by comparing various data stored and associated with each customer order. For example, the order NBBO and the execution NBBO associated with a particular order may be compared to determine if the customer received best execution. A comparison may result in flagging certain customer orders to identify anomalous trades or trades requiring further scrutiny. An order which executed outside of both the order NBBO and the execution NBBO may be flagged. An order which executed outside of the order NBBO but within the execution NBBO may be flagged if the difference between the order and execution times is less than one minute (or some other specified time). An order which executed within the order NBBO, but outside of the execution NBBO may be flagged for further scrutiny (e.g., to ascertain whether the execution report was late or improperly time stamped). An order which otherwise has some discrepancy between the order NBBO and the exchange NBBO (and/or other exchange quotes) may also be flagged. This information may, for example, be stored in (or accessible to) quality database 600 associated with order protection system 500.

Next, Applicant argues that Buckwalter does not teach receiving real-time market data relative to one of said market order executions. Paragraphs 42 and 31 as cited above shows that Buckwalter teaches receiving real-time market data relative to one of said market order execution.

[0042] Processing continues at 208 where execution time NBBO data is captured. For example, this NBBO information may be retrieved from market data source 112 such as the OPRA data feed. As used herein, this NBBO data associated with a particular product at the time of execution of a customer order involving the product will be referred to as "execution NBBO data" (and may be synthesized from BBO data from each of the exchanges). The execution NBBO data associated with the product traded is captured and stored or otherwise associated with the order information, the order NBBO data, and the execution data. For example, this information may be stored at, or otherwise accessible to, order protection system 500. In some embodiments, execution NBBO data may also include data relating to market conditions or exchange-specific information such as whether the markets at the time of execution were fast, whether the execution was a book order, auto eligible, late, or the like. Market size at the time may also be provided.

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[0031] Market data 112 may be any of a number of different types of options market data received from a variety of data sources and which can be used to facilitate option transactions. For example, in the U.S., intra-day option pricing data is provided by the Option Price Reporting Authority (OPRA). In some embodiments, market data 112 includes a feed of OPRA data. In some embodiments, this OPRA data feed is received by order protection system 500 and/or trading system(s) 200 substantially in real-time. This OPRA data feed provides option pricing from each of the options exchanges in the U.S. Those skilled in the art will recognize that other types of market data sources may also be used to assist in the processing and routing of transactions as described herein. For example, daily or monthly transaction volume information may be retrieved from the OCC or other sources and used to support routing decisions. As another example, daily pricing data may be retrieved from different specialists or traders. Market data 112 may be received by order protection system 500 and/or trading system(s) 200 on a regular basis or substantially in real-time.

Applicant is reminded that The Examiner has cited particular columns and line numbers in the references as applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Next, applicant argues that Buckwalter does not teach calculating one or more execution qualities in real-time. Examiner disagrees. Buckwalter teaches the concept of comparing the NBBO at time of order vs. the NBBO at time of execution. The comparison might identify an anomalous trade requiring further scrutiny. One skilled in the art would recognize this comparison as being a calculated execution quality. The difference in NBBO pricing can be calculated by subtracting the two values.

[0043] Processing may continue at 210 where quality data is generated regarding the customer order. Quality data may be generated, for example, by comparing various data stored and associated with each customer order. For example, the order NBBO and the execution NBBO associated with a particular order may be compared to determine if the customer received best execution. A comparison may result in flagging certain customer orders to identify anomalous trades or trades requiring further scrutiny. An order which executed outside of both the order NBBO and the execution NBBO may be flagged. An order which executed outside of the order NBBO but within the execution NBBO may be flagged if the difference between the order and execution times is less than one minute (or some other specified time). An order which executed within the order NBBO, but outside of the execution NBBO may be flagged for further scrutiny (e.g., to ascertain whether the execution report was late or improperly time stamped). An order which otherwise has some discrepancy between the order NBBO and the exchange NBBO (and/or other exchange quotes) may also be flagged. This information may, for example, be stored in (or accessible to) quality database 600 associated with order protection system 500.

Next, Applicant argues that Buckwalter does not teach conveying said one or more execution qualities to said trader. Examiner notes that convey real-time execution qualities to the trader is not in the claims as recited by Applicant on page 11, lines 7-8.

Buckwalter teaches in paragraph 22 and 53, that the quality data can be monitored and summarized by the broker and the brokers customer (trader).

[0022] Quality data or information is then generated by comparing the market data at the time the order was received and the market data at the time of execution to identify any discrepancies or information affecting execution quality. In some embodiments, if it appears that the customer did not receive best execution on the order, corrective steps may be taken to provide the customer with best execution. In some embodiments, a number of execution quality and analysis reports may be generated based on the stored information, allowing the broker and the broker's customers to monitor and summarize order activity and quality.

[0053] Quality database 600 (as depicted) includes entries identifying a number of pieces of information regarding customer orders which were received by trading system 200. This quality data may be generated on a substantially real-time basis throughout the trading day to ensure that brokers and their customers are aware of the general quality of trading and to allow brokers to take corrective action on behalf of their customers. In some embodiments, the type of data stored in quality database may be varied based on customer-specified rules. In some embodiments, the type of data stored in quality database is generally fixed by the entity operating order protection system 500.

Examiner notes that claims 18-23 were rejected under 35 USC § 102(e).

Examiner does not need to establish a prima facie case of obviousness.

4. Applicant's arguments filed January 3, 2008 regarding claims 19-20 have been fully considered but they are not persuasive. Applicant has not presented any substantial arguments with respect to claims 19-20. Examiner maintains the rejections cited in the prior Office Action.

5. Applicant's arguments filed January 3, 2008 regarding claims 21-23 have been fully considered but they are not persuasive. Applicant argues that Buckwalter does not teach a system comprising a calculation module, means for intercepting market trade communication and means for conveying execution quality on one or more market trades. Examiner disagrees. Buckwalter teaches a calculation module in Figure 3, Order Protection System (item 500) and Quality Data (item 600). Buckwalter teaches

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that information and data from the Trading System is stored or received (intercepted) into databases in the Order Protection System. From here, market trade execution quality data can be generated (calculated) and monitored throughout the day in real time as evidenced in paragraph 53. Further, the quality data can be easily displayed or printed out via an output device as shown in Figure 3, item 550 and paragraph 48.

[0048] Reference is now made to FIG. 3 where an embodiment of order protection system 500 is shown. As depicted, order protection system 500 includes a computer processor operatively coupled to a communication device 520, a storage device 530, an input device 540 and an output device 550. Communication device 520 may be used to facilitate communication with, for example, other devices (such as user devices 102, exchanges 104, trading system 200 and sources of market data 112). Input device 540 may comprise, for example, a keyboard, a keypad, a mouse or other pointing device, a microphone, knob or a switch, an infra-red (IR) port, a docking station, and/or a touch screen. Input device 540 may be used, for example, to enter information (e.g., information regarding routing rules or the like). Output device 550 may comprise, for example, a display (e.g., a display screen), a speaker, and/or a printer.

[0050] Storage device 530 stores one or more programs 515 for controlling processor 510. Processor 510 performs instructions of program 515, and thereby operates in accordance with the present invention. In some embodiments, program 515 may be a rule-based engine which applies routing rules to customer orders. In some embodiments, program 515 may be configured as a neural network or other type of program using techniques known to those skilled in the art to achieve the functionality described herein. In some embodiments, program 515 may provide the functionality of each of the major components of trading system 200, including execution core 202 and router 400.

[0051] Storage device 530 also stores databases, including, for example, a quality database 600. Other databases may also be provided (e.g., if the same device provides the functionality of the router and the execution core, order and execution data may also be stored in storage device 530 as well). An example of a quality database 600 is described below in conjunction with FIG. 4, and example quality data is described below in conjunction with a description of various quality data generation and monitoring features. Those skilled in the art, upon reading this disclosure, will understand that a number of different quality data and reports may be utilized.

[0052] Referring now to FIG. 4, a table represents a quality database 600 that may be stored at (or accessible by) order protection system 500. This database is described in detail below and depicted with exemplary entries in the accompanying figure. As will be understood by those skilled in the art, the schematic illustrations and accompanying descriptions of the databases presented herein are exemplary arrangements for stored representations of information. A number of other arrangements may be employed besides those suggested by the table shown. Similarly, the illustrated entries of the database represent exemplary information only. Those skilled in the art will understand that the number and content of the entries can be different from those illustrated herein. Other example data and combinations of data are depicted in the user interfaces described below in conjunction with FIGS. 5A and 5B.

[0053] Quality database 600 (as depicted) includes entries identifying a number of pieces of information regarding customer orders which were received by trading system 200. This quality data may be generated on a substantially real-time basis throughout the trading day to ensure that brokers and their customers are aware of the general quality of trading and to allow brokers to take corrective action on behalf of their customers. In some embodiments, the type of data stored in quality database may be varied based on customer-specified rules. In some embodiments, the type of data stored in quality database is generally fixed by the entity operating order protection system 500.

6. In response to applicant's argument that Buckwalter does not teach a system comprising a calculation module, means for intercepting market trade communication and means for conveying execution quality on one or more market trades, a recitation of the intended use of the claimed invention must result in a structural difference between

the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

7. Applicant's arguments filed January 3, 2008 regarding claims 19-20 have been fully considered but they are not persuasive. Applicant has not presented any substantial arguments with respect to claims 22-23. Examiner maintains the rejections cited in the prior Office Action.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 18 and 19 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 18 recites the limitation "the identity" in line 4. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 19 recites the limitation "the value" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 18-23 rejected under 35 U.S.C. 102(e) as being anticipated by Buckwalter et al., U.S. Patent Application Publication 2003/0177085 (see PTO-892, Ref. C).

14. As per claim 18, Buckwalter teaches a computer implemented method providing indications of market trade quality, comprising:

intercepting one or more market order communications from a trader (see paragraph 37);

storing the identity of said one or more market orders (see paragraphs 37, 49-51);

intercepting one or more market order executions matching one of said stored market order identities (see paragraph 39);

receiving real-time market data relative to one of said market order executions (see paragraph 39);

calculating one or more execution qualities in real-time (see paragraphs 41-43);

conveying said one or more execution qualities to said trader (see Figure 5A).

15. As per claim 19, Buckwalter teaches the method of claim 18 as described above. Buckwalter further teaches wherein the conveyance of said one or more execution

qualities is as a result of departure of the value from predetermined limits (see paragraph 43).

16. As per claim 20, Buckwalter teaches the method of claim 18 as described above. Buckwalter further teaches wherein said execution quality is conveyed to a trader via a display (see paragraphs 48 and 58 and Figure 5A and Figure 3, item 550).

17. As per claim 21, Buckwalter teaches a computer implemented system for providing indications of market trade quality, comprising:

at least one calculation module, wherein market trade execution quality calculations occur in real-time (see Figure 3, items 530, 515, 600 and paragraphs 50-53);

a means for intercepting market trade communications (see Figure 1, item 500 and paragraphs 48-51); and

a means for conveying execution quality of one or more market trades (see Figure 3, item 550, Figure 5A and paragraphs 48 and 58).

18. As per claim 22, Buckwalter teaches the system of claim 21 as described above. Buckwalter further teaches wherein said market trade communications comprise: market trade order communications (see paragraphs 37-43).

19. As per claim 23, Buckwalter teaches the system of claim 21 as described above. Buckwalter further teaches wherein said market trade communications comprise: market trade execution communications (see paragraphs 37-43).

Conclusion

The Examiner has cited particular columns and line numbers in the references as applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHAHID R. MERCHANT whose telephone number is (571)270-1360. The examiner can normally be reached on First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Abdi can be reached on 571-272-6702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kambiz Abdi/
Supervisory Patent Examiner, Art
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SRM